

## Remarks

Claims 21–25, 32–66, and 68–88 are pending in this application. There are no amendments to the claims.

Applicants acknowledge the examiner's apology for his change in position regarding the allowability of the claims. Applicants are very disappointed. Despite the examiner's change in position, applicants strongly believe the claims in their current remain allowable. Reconsideration of the rejections and allowance of the claims are respectfully requested.

### 1. Section 112 Rejection

Claims 21–25, 32–66, and 66–88 were rejected under section 112, second paragraph, as allegedly being indefinite. Applicants assert that the previously presented claims are definite and sufficiently clear, and no changes are needed to the claims.

As further support, applicants point to the record. In the previous office action, the examiner found the claims sufficiently definite. Moreover, throughout the prosecution history, the examiner's articulate a clear understanding of the claims.

Nevertheless, now the examiner has changed his mind to make this rejection, which the examiner could have brought up much earlier in the prosecution. With this sudden change in the examiner's viewpoint, even if applicants were to change the claims now (which applicants believe is wholly unnecessary), the examiner might then change his mind again—next time saying he *prefers* the claims in the current format instead.

### 2. Section 102 Rejection

Claims 21–24, 42–58, 66, 68, 69, 71, 75, 77, 87, and 88 were rejected under section 102 as being anticipated by U.S. patent 4,763,536 (Beshoory).

Reconsideration of the rejection and allowance of the claims are respectfully requested. All claims in the application are allowable for reasons discussed previously and highlighted below.

### 3. Claim 21

Claim 21 recites features not shown or suggested by the prior art. Claim 21 recites:

A method comprising:

providing *a housing that defines an interior chamber*, an end and an opposite end of the housing hereinafter being referred to as first and second ends of the housing, respectively, *the housing having a first opening nearer the first end than the second end*; and

providing a conduit connected to the housing, the conduit including a second opening that opens into the interior chamber and a third opening, the third opening being nearer to the first end than to the second end,

wherein a fluid flow is from one of the first opening and the second opening to another of the first opening and the second opening, and one of the third and first openings is to accept input fluid and another of the third and first openings is to produce fluid output, and

wherein input fluid enters the interior chamber only through at least one of the first or third opening and *the second end of the housing comprises no openings*

(emphasis added).

The examiner has yet again changed his position on this claim. The examiner has not made a proper section 102 rejection. The examiner's continues to attempt to construe Beshoory to anticipate this claim so that Beshoory becomes so distorted that it does not even resemble itself anymore, and cannot be used for the Beshoory originally intended. For the reasons stated in the record, rather, Beshoory in fact teaches away from the invention.

Further, claim 21 should be allowable for at least the following reasons.

### ***3.1. No One Housing***

Claim 21 recites "*a housing that defines an interior chamber . . . having a first opening nearer the first end than the second end . . . the second end of the housing comprises no openings.*" There is a first limitation of the housing, i.e., "a first opening nearer the first end than the second end" and a second limitation of *the same housing*, i.e., "the second end of the housing comprises no openings." In other words, the claim recites *two limitations of one housing*. With Beshoory, the examiner has *attempted to read two " housings" as one housing*.

The examiner suggests outer tube 40 is a "housing" which satisfies the claim's first limitation. Then—apparently recognizing that outer tube 40 has openings at both ends—the examiner replaces outer tube 40 with bell jar 21. The examiner now points to bell jar 21 as a "housing" satisfying the claim's second limitation.

But, outer tube 40 and bell jar 21 are completely different and separate structures. Outer tube 40 defines one interior chamber and bell jar 21 defines another separate interior chamber. As such, the examiner cannot properly conclude that Beshoory anticipates claim 21.

### ***3.2. Second End of Beshoory has An Opening***

Claim 21 recites “the second end of the housing comprises *no openings*.” In contrast, even under the examiner’s strained interpretation of “housing” *the second end of Beshoory has an opening*.

Specifically, bell jar 21, like bell jar 10 (figure 1), has an opening at its right-most end. The opening allows gas to flow from right to left—in other words, to “enter . . . bell jar 21, pass through inner tube 30, pass through one or more apertures 33, into outer tube 40, and expel the treat gas, along with any volatiles through exit 44.” Column 44, lines 57–60.

Again, claim 1 in contrast recites “the second end of the housing comprises *no openings*.”

For at least this additional reason, claim 21 should be allowable. Claims 42, 50, 63, 66, 72, 76, and 78 should be allowable for at least similar reasons as claim 21. Claims 22–25, 43–49, 51–58, 64–65, 68–69, 71, 73–75, 77, 79–88 should be allowable for at least being dependent upon allowable base claims.

### **4. Claim 42: No Undivided Space**

Claim 42 recites:

A method comprising:

providing a housing having a first end and a second end, the second end being an opposite end to the first end, and the housing having a first opening nearer the first end than the second end; and

providing a conduit coupled to the housing, the conduit having a second opening that opens into an interior chamber and a third opening, wherein the third opening is nearer to the first end than to the second end, and a cross section of at least a portion of the conduit forms an annular ring around at least a portion of the interior chamber of the housing,

wherein a fluid flow is from at least one of the first to the second opening or the second to the first opening, and when the third opening accepts input fluid, the first opening produces output fluid, and when the first opening accepts input fluid, the third opening produces output fluid, and

wherein the *interior chamber comprises an undivided space from the first end to the second end, and the housing is closed at the second end*

(emphasis added).

Nowhere does Beshoory show or suggest “the interior chamber comprises *an undivided space from the first end to the second end, and the housing is closed at the second end.*” The examiner’s swaps outer tube 40 with bell jar 21 and then ignores the opening in the bell jar, does not hide the fact one of skill in the art clearly sees that Beshoory shows at least *three spaces* formed by outer tube 40, inner tube 30, and bell jar 21. Figure 2.

In contrast, the claim recites “*an undivided space from the first end to the second end.*” For at least this reason, claim 42 should be allowable. Claims 50, 63, 68, 70, 72, 76, 78, 79, and 84 should be allowable for at least a similar reason as claim 42. Claims 43–49, 51–58, 64–65, 71, 73–74, 80–83, and 87–88 should be allowable for at least being dependent upon allowable base claims.

## **5. Dependent Claims**

Dependent claims 22–25, 43–49, 51–58, 64–65, 68–69, 71, 73–75, 77, 79–88 recite additional limitations which better distinguish the invention over Beshoory. Some of these limitations are discussed below.

### ***5.1. Claims 44 and 52: No Inserting Housing Into Tube Furnace***

Claims 44 and 52 recite “*inserting the housing into a tube furnace.*” Beshoory does not show or suggest at least this feature, and therefore claims 44 and 52 should be allowable.

### ***5.2. Claims 69, 74, 80, and 85: No Housing Made Wholly of One Material***

Claims 69, 74, 80, and 85 recite “*wherein the housing is made wholly of one material.*” The examiner proposes that the housing includes not just outer tube 40, but interlocking nut assembly 60, balance housing 20, and bell jar 21.

But, while outer tube 40 is made from quartz glass, nut assembly 60 includes metal and Teflon and balance housing 20 includes electronics. Column 2, lines 18 and 26; Column 1, line 67. Therefore, the examiner’s “housing” is not “made wholly of one material.” Rather, the examiner’s “housing” is made of at least three materials including quartz glass, metal, and Teflon.

For at least this reason, claims 69, 74, 80, and 85 should be allowable.

### ***5.3. Claim 81: No Material is Translucent***

Claim 81 recites “wherein the material is translucent.” Beshoory does not show or suggest at least this feature. Rather, nut assembly 60 of the examiner’s “housing” includes metal—metal is not translucent.

For at least this reason, claim 81 should be allowable.

#### ***5.4. Claim 82: No Material is Crystalline***

Claim 82 recites “wherein the material is crystalline.” Beshoory does not show or suggest at least this feature, and therefore claim 82 should be allowable.

#### ***5.5. Claim 83: No Housing is Nonconductive***

Claim 83 recites “wherein the housing is nonconductive.” Beshoory does not show or suggest at least this feature, and therefore claim 83 should be allowable.

### **6. Section 103 Rejection**

In the alternative, claims 21–24, 42–58, 66, 68, 69, 71, 75, 77, 87, and 88 were rejected under section 103 as being unpatentable over Beshoory. Claim 25 was rejected under section 103 as being unpatentable over Beshoory. Claims 63–65, 70, 72–74, 76, and 78–86 also appear to have been rejected under section 103 over Beshoory as these claims were included under the heading “Claim Rejections – 35 U.S.C. § 103” in the office action.

The section 103 rejection is improper because it would require a substantial reconstruction and redesign of Beshoory and change the basic principle under which Beshoory operates. Specifically, at page 5 of the office action the examiner proposes:

It would have been obvious to one of ordinary skill in the art, at the time of invention by the application, to have modified tube 40 of Beshoory by placing the apertures 33 through the closed web 42 on the same side as the fluid input and output, 43 and 44, leaving the opposed end closed with no holes.

Presumably then, the purge gas instead of flowing from right to left as described at column 2, lines 56–60, would flow in the complete opposite direction—left to right—somehow make a 180-degree turn, and flow from right to left.

Such “a substantial reconstruction and redesign of the elements shown in [Beshoory] as well as a change in the basic principle under which the [Beshoory] construction was designed to

operate” is an improper rejection under section 103. MPEP 2143.02 (quoting *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959)).

For at least this reason, claims 21–25, 42–58, 63–66, and 68–88 should be allowable.

### **Conclusion**

For at least these reasons, applicants believe all claims now pending in this application are in condition for allowance. Applicants respectfully request that a timely Notice of Allowance be issued in this case. If the examiner believes a telephone conference would expedite prosecution of this application, please contact the signee.

Respectfully submitted,

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